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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,374	07/31/2003	Steven M. Scheifers	CML00826T 9640/127	2137
30016	7590	05/20/2004	EXAMINER	
CARDINAL LAW GROUP, LLC SUITE 2000 1603 ORRINGTON AVENUE EVANSTON, IL 60201			ASINOVSKY, OLGA	
			ART UNIT	PAPER NUMBER
			1711	

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/631,374

Applicant(s)

SCHEIFERS ET AL.

Examiner

Olga Asinovsky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 8-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 07/31/2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Election/Restrictions***

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-7, drawn to a self-joining polymer composition, classified in class 523, subclass 200 and 201.
  - II. Claims 8-9 and 10-15 are, drawn to a method of using a self-joining polymer composition for healing a failure in a composite member, classified in class 523, subclass 200 and class 428, subclass 402.2.
  - III. Claim 16-18 and 19-22, drawn to an electronic package composition, classified in class 428, subclass 620.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions of Group I and Group II are related as product and process of use.

The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the process for using the product can be practiced with another materially different product such that a plurality of reactable pendant groups attached to the polymer include a hydroxyl group.

3. Inventions of Group I and Group III are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). In the instant case, the intermediate product is deemed to be useful as an adhesive and the inventions are deemed patentably distinct since there is nothing on this record to show them to be obvious variants. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

4. Inventions of Group II and Group III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention of group II has separate utility such as an adhesive for automotive parts. See MPEP § 806.05(d).

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Frank Nicholas on May 14, 2004 a provisional election was made without traverse to prosecute the invention of Group I,

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claims 1-7. Affirmation of this election must be made by applicant in replying to this Office action. Claims 8-22 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over White et al U.S. Patent 6,518,330 or Guilbert et al U.S. Patent 6,075,072, each in view of Arfaei U.S. Patent 4,960,465 or Aharoni U.S. Patent 5,326,830

The claimed invention is a self-joining polymer composition, comprising: a polymer, plurality of amine pendant groups attached to the polymer, and plurality of microcapsules containing polymerizable material, wherein the microcapsules effective

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for rupturing such that the polymerizable material cross-linking with the reactable pendant groups of the polymer upon rupture of said microcapsules.

There is no working example.

White discloses a composite material containing a plurality of capsules in a polymer, column 3, lines 7-8 and column 7, lines 50-59. The composite material is self-healing. The capsules contain a polymerizer that may contain a polymerizable compound. Any polymerizable compound cited at column 3, lines 58-60 is readable in applicants' claimed flowable polymerizable material. The polymer in White invention may be any polymeric material into which the capsules are dispersed, column 5, lines 22-33.

Guilbert discloses a corrosion protective coating composition containing frangible microcapsules. The coating composition comprises a film forming binder and a plurality of microcapsules containing a fluid system comprising a corrosion inhibitor, column 3, lines 10-12. The film forming binders include polymers that are readable in applicants' claimed polymer, column 4, lines 43-47. The encapsulated materials in the capsules are readable in applicants' claimed flowable polymerizable material. The capsules may have a core/shell structure such that the capsule wall is a shell segment and a core segment comprises the fluid materials, column 5, lines 121-50.

The difference between the present claims and White and Guilber is the requirement in the present claims that a polymer has a plurality of amine pendant groups attached to the polymer.

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Arfaei discloses the graft copolymer containing a polyether backbone and side chains attached at various points to said backbone polymer, column 1, lines 48-58. The attached side chains are polymerizable ethylenically unsaturated monomers including amino groups, column 3, line 41 through column 4, line 24.

Aharoni discloses a chain extended polymer and a graft copolymer, column 1, lines 42-45. The base polymer can be a polymer having any functional group that form a linking group through which the polymers are coupled, column 4, lines 57-68. Reactive groups include amino functional groups, column 6, lines 60-63.

In each primary reference the film forming binder can be any polymer. Each reference discloses the adhesion between the capsules and the polymer upon the capsules will rupture. It would have been obvious to one of ordinary skill in the art to substitute the polymer binder in White and Guilber invention with a backbone polymer having a side chain containing the amino moiety as disclosed by Arfaei or Aharoni because the reaction of a polymer with broken microcapsules are depending on the nature of the reactive group of the flowable polymerizable material inside the microcapsules, and, because any flowable polymerizable material is readable in applicants' claims. The motivation is that it is within the skill of one in the art to substitute a polymer in the invention of White and Guilbert with the backbone polymer having a functional amino group as disclose by Arfaei and Aharoni for the purposes of providing a crosslinking

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properties between the functional amino group of the backbone polymer and a flowable polymerizable material inside in the capsules.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga Asinovsky whose telephone number is 571-272-1066. The examiner can normally be reached on 9:00 to 5:30 pm.

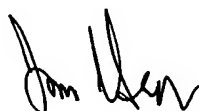
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Olga Asinovsky  
Examiner  
Art Unit 1711

*O.A.*

O.A.  
May 14, 2004



James J. Seidleck  
Supervisory Patent Examiner  
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